

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 6, line 23, with the following rewritten paragraph:

Block 100 is followed by a block 110, which functions as a timing element such that it introduces a delay T_d so that the stimulating signal $S(t)$ is applied for at least a predetermined period of time T_d ; such a period of time T_d having a value so that ratio GT has time to reach and overcome its initial minimum value T_m , in particular ratio GT at the end of delay T_d is placed on the second portion C_{GT-II} of curve C_{GT} .

Please enter this new paragraph beginning at page 9, line 23:

The operational process of blocks 100-180 and associated device elements comprise controlling elements for applying the stimulating signal in a controlled manner.

Please replace the paragraph beginning at page 12, line 5, with the following rewritten paragraph:

The substance 30 introduced may be inorganic or organic or biopolymeric, e.g a nucleic acid; a DNA molecule containing regulatory sequences and sequence coding for therapeutic genes or genes of interest for biomedical or biotechnological purposes; an oligonucleotide, whether natural (phosphodiester) or modified (inside the backbone of the oligonucleotide, such as phosphosulfates, or at the extremities, by addition of groups to protect the oligonucleotides from digestion of nucleases; the description of oligonucleotide modifications being non-limiting); a protein or peptide, whether natural or genetically or chemically modified, extracted from natural sources or obtained by synthesis, or a molecule simulating the structure of a protein or peptide, whatever its structure; a cytotoxic agent, in particular, the antibiotic bleomycin or the cisplatinum; a penicillin; and other pharmacological agents. The substrate 12 can also be treated without the application of a substance when the purpose is to extract from the cells C a molecule (organic or inorganic or biopolymeric) contained in or produced by the living cells C. In particular, the production of proteins or small organic molecules produced by genetically modified cells or genetically selected cells could be collected from the producing cells by the controlled procedure achieved by the device here described. Extraction of substances such as the

molecules from cells C can be achieved by extraction means such as diffusion through the permeabilized membranes, by reverse iontophoresis or by any other active, passive or combined mechanism

Please replace the paragraph beginning at page 13, line 25, with the following rewritten paragraph:

Then to avoid damages in the cells an immediate check is performed (by hazard detecting elements of blocks 120 and 130) to see if, after the minimum has been reached, curve C_{GT} has a too rapid increase ($dG > 1$); in fact, a too rapid increase after the minimum is a clear indication of irreversible damages to the cells (to that regard see curve $C_{GT-IRRERSIBLE}$ shown in FIG. 3). In case of a detected indication of irreversible damages a corrective action is performed (blocks 140 and 145) by immediately decreasing the voltage applied thus preventing final damage to the cells. The check of hazard detecting elements of blocks 120, 130 may be substituted (or integrated) by the check of blocks 126 and 127.